Silktree (Albizia julibrissin Durazz.)

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Introduction

Problems Created
Silktree, also known as mimosa, is native to Asia, from Iran to China and was introduced to the U.S. in 1745 as an ornamental plant because of its unusual, attractive and fragrant pom-pom like flowers and attractive foliage. It is a hardy species from the pea family (Fabaceae) that tolerates a variety of soil and moisture conditions, enhanced by its nitrogen-fixing ability. It grows vigorously and displaces native trees and shrubs, spreading by seed and vegetative means (root sprouting).

Regulations
Mimosa is listed as a significant or severe threat in several southeastern US states, including Tennessee in the MidSouth region.

Description

Vegetative Growth
Mimosa grows as a deciduous tree 10’ to 50’ in height with one or many stems, smooth light-brown to grayish bark, finely dissected compound leaves, and showy pink flowers that continually produce legume pods through summer. Pods usually persist into winter. The twigs are slender to stout, bright green when young, then shiny grayish brown with small lenticels, but lacking a terminal bud. Mimosa leaves are alternately arranged, bipinnately compound, 6” to 20” long with 8 to 24 pairs of branchlets and 20 to 60 feathery leaflets per branch. The leaflets are asymmetric, about 0.5” long and dark green, with the midvein nearer and running parallel to one margin. Margins are not serrated.

Flowering
Mimosa flowers in May to July, with some plants producing flowers into November. Flowers grow in terminal clusters at the base of the current year’s twigs; each cluster will have 15 to 25 sessile, 1.5” to 2” flowers. Flowers are pom-pom like with numerous filamentous, bright-pink tufts with white bases, and fragrant. Mimosa fruit consists of clusters of flat legume pods with bulging seeds, each pod 3” to 7” long, and can be seen from June to February. Typically 5 to 10 seeds are produced per pod. Mimosa seed coats are impermeable, resulting in long-term dormancy. Viability has been measured as high as 90% after five years.

Dispersal
Mimosa is spread through both vegetative growth and seed dispersal. Seeds and seed pods may be dispersed by wind, gravity and water. Mimosa can seed into wild areas from ornamental plantings. The plants resprout from the root stock.

Spread by
Mimosa has been widely used as an ornamental in landscaping, which has aided in its geographic spread.

Habitat
Mimosa favors disturbed areas, where it may establish from seed produced by nearby ornamental plants or from seed in contaminated fill soil. This species grows best in full sun and often occurs along road sides and in vacant lots in urban and suburban areas. It can tolerate partial shade but is seldom found in forests with full canopy cover, or at elevations above about 900m (3,000ft), as its lack of cold-hardiness is a limiting factor. Mimosa often invades riparian areas, where it exploits eroded stream-banks and by animal- or water-transported seeds. As is the case with many serious invaders, Mimosa tolerates a broad range of soil conditions; this is enhanced by its ability to fix nitrogen via root symbionts.
Distribution

It occurs from CA across the southern US to NY in disturbed areas such as roadsides, forest edges and various open habitats. Mimosa is present in more than half the counties of LA, AR, and AL. Data available in the USDA PLANTS database do not indicate this degree of prevalence in MS, but this very likely is the result of inadequate representation in state herbaria, as this species is quite widespread in the state.

Control Methods

**Biological Control**

*Fusarium oxysporum f. perniciosum* is a fungus that attacks mimosa in the U.S. and spreads through the soil. It infects its host through the root system and may kill the tree. It is not currently used as a biological control agent.

**Chemical Control**

Chemical control options for mimosa include imazapyr, triclopyr, or glyphosate as foliar, stem injection, cut stump, and basal bark herbicide applications.

Foliar spray should be considered for large stands of mimosa seedlings where risk to non-target species is minimal. Glyphosate can be applied as a 2% solution with 0.5% non-ionic surfactant added to the spray mixture. A low pressure and coarse spray pattern is recommended to reduce spray drift and damage to non-target species. Triclopyr also be applied as a 2% solution with 0.5% non-ionic surfactant added to the spray solution. Triclopyr is selective for broadleaf weed species and therefore should be used in areas where desirable grasses are growing under or around mimosa.

The cut stump method is viable when treating large individual trees or in areas that have desirable vegetation. Stumps should be treated immediately after the tree is cut. Both glyphosate and triclopyr can be applied to cut stumps as a 50% solution.

Basal bark applications can be made throughout the year except when the ground is frozen to a height of 15” to 20” from the ground. Triclopyr as a mixture of 25% herbicide and 75% horticultural oil is effective. All basal bark applications should contain an oil carrier and applied to completely wet the bark.

The stem injection method should be considered for controlling individual large trees. Imazapyr can be injected as a 1 milliliter solution at each injection site at no more than 1” intervals between cut edges. Triclopyr can be injected using 1.5 milliliters of undiluted concentrate at 3” to 4” intervals around the trunk.

**Mechanical Control**

Trees can be cut at ground level with power or manual saws. Cutting is most effective when trees have begun to flower to prevent seed production. Because mimosa spreads by suckering, resprouts are common after treatment. Cutting is an initial control measure and will require either an herbicidal control or repeated cutting for resprouts.

Girdling can be used on large trees where the use of herbicides is impractical. Using a hatchet, make a cut through the bark encircling the base of the tree, approximately 6” above the ground. Be sure that the cut goes well into or below the cambium layer. This method will kill the top of the tree but resprouts are common and may require follow-up treatments for several years until roots are exhausted.

Hand pulling can be effective for young trees. Plants should be pulled as soon as they are large enough to grasp, but before they produce seeds. Seedlings are best pulled after a rain when the soil is loose. The entire root must be removed since broken fragments may resprout.

**Physical Control**

No physical controls are currently recommended for Mimosa.

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Table 1. Suggested chemical control methods for mimosa.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Method</th>
<th>Rate per acre</th>
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</thead>
<tbody>
<tr>
<td>Glyphosate</td>
<td>Foliar spray, broadcast</td>
<td>2% solution</td>
</tr>
<tr>
<td>Triclopyr</td>
<td>Foliar spray, broadcast</td>
<td>20% solution</td>
</tr>
<tr>
<td>Triclopyr</td>
<td>Basal bark</td>
<td>25% solution</td>
</tr>
<tr>
<td>Triclopyr</td>
<td>Cut stump</td>
<td>50% solution</td>
</tr>
<tr>
<td>Imazapyr</td>
<td>Injection</td>
<td>1.5 mm of concentrate at 3-4 in. intervals around the trunk</td>
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</tbody>
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